

**Draft Summary of the Engineering and Operations Work Group Meeting
Oroville Facilities Relicensing (FERC Project No. 2100)
October 31, 2003**

The Department of Water Resources (DWR) hosted the Engineering and Operations Work Group (EOWG) meeting on October 31, 2003 via video conference between the Oroville Field Division, the Resources Building in Sacramento, and the San Joaquin Field Division.

A summary of the discussions, decisions made, and action items is provided below. This summary is not intended to be a transcript, analysis of the meeting, or to indicate agreement or disagreement with any of the items summarized, except where expressly stated. The intent is to present an informational summary for interested parties who could not attend the meeting. The following attachments are provided with this summary:

- Attachment 1 Meeting Agenda
- Attachment 2 Meeting Attendees
- Attachment 3 Engineering and Operations Work Group Resource Action Matrix
- Attachment 4 Summary of Potential Sensitivity Analysis

Introduction

Attendees were welcomed to the EOWG meeting. The meeting agenda and desired outcomes were reviewed. The meeting agenda and list of meeting attendees and their affiliations are appended to this summary as Attachments 1 and 2, respectively.

September 26, 2003 Meeting Summary and Action Items

A summary of the September 26, 2003 EOWG is posted on the relicensing web site. The EOWG reviewed the status of action items from that meeting as follows:

- Action Item EO#87:** Follow-up on the PMF report schedule and report back to the EOWG on when the report will be available for review
- Status:** Rashid Ahmed, DWR's Resource Area Manager for Engineering told the EOWG that the PMF report should be completed in July 2004. He noted that the inflow hydrograph is completed and should be available for review soon. The complete report is currently under internal review and cannot be released to the collaborative at this time.
- Action Item EO#88:** Review the SP-E4 report and the study plan to confirm that the study plan scope and tasks are being completed and ensure that the study methodology has not been changed
- Status:** Rashid Ahmed reported that he has reviewed the SP-E4 and feels that the study is addressing all of the tasks contained within the plan. He indicated that issues brought forward by stakeholders would be addressed through venues other than relicensing. Curtis Creel, DWR's Resource Area Manager for Operations added that the Department, Yuba County Water Agency, and Corps of Engineers (Corps) are collaborating to evaluate various factors that play a role in the development of forecasting tools, additional gaging station development, real time information dissemination, as well as clarification of the water control manuals for both the Oroville Facilities and New Bullards Bar. He expects a report on this activity to be available in the summer of 2004.

Related activities the Department is currently working on include developing criteria to create additional space in the Afterbay as needed for flood operations, analyzing travel time for releases from the Oroville Facilities and New Bullards Bar, and a

better understanding of how sensitive the flood system is to changes in assumptions about levee integrity, travel time, and operational flexibility.

Some at the EOWG suggested it would be prudent to consider additional fall releases to lower lake storage to provide additional flood protection; they added that pre-releasing water could improve flood protection. Curtis described how pre-storm releases have been used in the past to free up additional storage space in anticipation of high inflows. He noted that increasing river flows in the fall – between the middle of October and the end of November (which has historically been the key spawning period for Chinook in the Feather River) – and then reducing them later would likely impact spawning chinook. The existing criterion requires the Department to maintain high flows through March if they are initiated between October 15 and November 30. Maintaining high flows to the river through March would result in water supply impacts to the SWP in many years.

Bill Lewis representing Yuba City stated the SP-E4 report as described by the Department will not achieve the objectives outlined nor the approach described in SP-E4. He noted the study as described would simply summarize current operations and would not address the potential for improvements through analysis of optional actions such as changes to ramping rates, pre-releases or other activities that could be accomplished without affecting the Corps flood operations manual.

Ken Kules representing Metropolitan Water District (MWD) asked if relicensing is the proper forum to address these questions and Bill responded that the relicensing forum provides a timely opportunity to evaluate changes to operations that might enhance flood protection downstream because there is a definite timeline for completing studies. He pointed out that other venues discussed for further analysis have no such timeline attached and thus could take much longer to complete. One participant pointed out that the flood operations manual currently in use describes another Corps flood project (Marysville Reservoir) that the Corps never constructed which would have provided additional flood protection from unregulated Yuba River flows. Bill Lewis suggested that ramping rates could be analyzed, without affecting the flood operations manual, within the SP-E4 Study Plan to determine if increased ramping rates would provide a benefit during a flood event. Curtis pointed out that such analysis is part of the DWR/YCWA/Corps process. He also referenced a letter describing ongoing DWR efforts to address flood control concerns sent from Ralph Torres to the Yuba/Feather Workgroup and agreed to distribute copies of the letter to the EOWG.

The EOWG discussed the potential conflict between flood control and environmental resource needs and Curtis pointed out the need to have fisheries biologists involved in the discussion. He suggested that the issue should be a topic for a cross-resource meeting with members of the Environmental Work Group. Robert Hughes representing California Department of Fish and Game (DFG) suggested flood control may be appropriate for settlement and the Facilitator briefly described the difference between actions that will be incorporated into the FERC licensing conditions and those that will be agreed to in settlement and enforced through mechanisms other than FERC. Curtis agreed to develop a chart showing what information will be contained in the SP-E4 report and what information will be provided through other DWR activities.

Action Item EO#89: Check with Carl Chen and Jerry Boles regarding Diversion Pool stratification and if altering withdrawal can affect stratification.

Status: Curtis Creel described his discussion with the temperature modelers regarding the potential to create stratification within the Diversion Pool and explained that their initial thought was to pull shutters to access the coldest water and then replace the shutters to overlay the cold water with a warmer layer. Curtis pointed out that the majority of the water available was cold while the demand from the agricultural and recreational interests was for warm water. The temperature modelers speculated

that some stratification could be maintained in the Diversion Pool even though the water body exhibits more riverine characteristics due to the short residence time.

- Action Item EO#90:** Provide additional detail to describe the actions envisioned to be included in Butte County PM&E#10, early warning for improved flood protection.
- Status:** This action item was discussed in relation to the resource action matrix development (see discussion below).
- Action Item EO#91:** Transfer watershed PM&E to the LUWG and coordinate modeling needs.
- Status:** This action item was discussed in relation to the resource action matrix development (see discussion below).
- Action Item EO#92:** Revise the graphs associated with Scenario 13 and distribute electronically to the EOWG for review.
- Status:** Art Hinojosa completed the revisions and distributed revised graphs to the EOWG for review.
- CARRY OVER
- Action Item EO#85:** Distribute electronically to EOWG for comment an annotated Modeling Workshop outline with detailed approach to the use of group breakouts, key issues, etc.
- Status:** The third Modeling Workshop was held on October 20th (see discussion below)
- Action Item EO#80:** Develop draft Engineering and Operations Matrix similar to Environmental Work Group matrix.
- Status:** This action item was completed and the matrix reviewed by the EOWG (see discussion below).
- Action Item EO#81:** Coordinate with Environmental Work Group to clarify modeling scenarios 12 and 16 and obtain additional information from Fisheries Task Force regarding questions to be answered by modeling effort.
- Status:** Curtis Creel reported on discussions with Terry Mills, Resource Area Manager for the Environmental Work Group. Revisions made as a result were reviewed during discussion of the revised modeling scenarios (see discussion below).

Resource Actions Matrix Development

Curtis Creel distributed a draft Resource Action Matrix (Attachment 3) and described the format and information included. The EOWG discussed the potential resource actions contained in the matrix as follows:

EO1: The EOWG discussed various ways that warmer water might possibly be available to the Feather River Service Area agricultural diverters while maintaining colder water releases downstream of the Afterbay including the construction of baffles to increase residence time within the Afterbay or a separate intake to draw warmer water directly from Oroville Reservoir. Alternatives include constructing a series of canals and dikes to direct cold water to the outlet, or relocating the diversions that are at the northern end of the afterbay. Curtis pointed out that Western Canal's and Richvale Canal's diversion is directly across from the power canal outlet so the water conveyed to Western Canal and Richvale is diverted before it has an opportunity to warm by traversing the length of the Afterbay. He noted that this arrangement actually results in warmer water delivered downstream through the Sutter Butte Canal outlet than is delivered to Western Canal's and Richvale Canal's diversion. .

EO2: Curtis noted that modeling scenario #1 would provide information relative to curtailment of pumpback operations suggested in this potential resource action.

EO3: The EOWG agreed that agricultural interests and biologists should jointly discuss their individual needs with operators who could describe the Oroville Facilities operational constraints related to temperature control.

EO4: The EOWG acknowledged that this action would be beneficial to Western Canal users but may not benefit downstream interests.

EO5 and EO6: Curtis noted that these two resources actions, submitted by the Low Flow Collaborative Alliance are very similar and the EOWG agreed to combine the actions into one. The EOWG discussed various options used by other relicensings to structure oversight committees designed to ensure that actions agreed to in settlement are carried out. The Facilitator agreed to provide the EOWG with examples of oversight committees designed for other recent relicensings.

EO7 and EO8: Curtis explained that the original PM&E submitted by Butte County was split into two separate resource actions, and he reminded the EOWG that a small group met earlier in the month to discuss details of these proposed actions including provisions to provide information to local emergency operations centers in a timely manner and pre-planning activities that could assist during flood events.

EO9: Curtis explained that this resource action was sent to the Land Use, Land Management and Aesthetics Work Group with the understanding that the EOWG would provide modeling assistance as needed. The Facilitator noted that the primary focus of this PM&E is fuel load reduction however the watershed scope would necessitate involvement by various land management entities with responsibilities in the watershed as well as with DWR. She agreed to confirm with the Land Use, Land Management and Aesthetics Work Group receipt of the PM&E.

Lori Brown with DWR agreed to provide copies of the proposed resource action information forms submitted for each of those included on the matrix that have not been previously distributed. She will also identify appropriate technical contacts for each resource action included in the matrix and indicate when specific studies are expected that will provide information on each action.

Modeling Workshop De-Brief

Curtis updated the EOWG on the Modeling Workshop held on October 20th in Oroville. He noted the turnout was light although most key agencies were represented and members of the PDEA team took advantage of the opportunity to be briefed on the status of information important to their analysis. Numerous posters containing important information were available at the workshop as handouts, and Lori Brown provided copies at the EOWG meeting for those participants who could not attend. Curtis noted that the next modeling workshop would likely be held in early January.

Revised Modeling Scenarios

The EOWG reviewed the Summary of Potential Sensitivity Analysis (Attachment 4), and Curtis explained the revisions made to the chart, indicated in redline/strikeout format. He reported that the Benchmark Study of existing conditions is nearly completed. The future conditions Benchmark Study might be conducted using 2020 hydrology which is available now instead of waiting for development of the 2030 hydrology which is not available yet and is not expected to differ significantly from the 2020 values. Curtis noted that Scenario #11 was combined with Scenario #10 and Scenarios #8 and 16 were combined and replaced with Scenario #22. Scenario #7 was refined to only include three flow values for consideration. Ken Kules suggested that 750cfs should be one of the values considered since this is a flow currently being discussed in the Environmental Work Group for the low flow channel. Curtis reported that he is attending the Environmental Work Group meetings and would confirm if this value is of interest to them. The

EOWG noted that a column indicating priority for the modeling runs has been dropped and Curtis agreed to include priority for runs in the next revision.

Next Steps

The EOWG agreed to set its next meeting as a conference call (with potential for a video conference if the JOC and OFD are available) from 9am to noon on November 21 to discuss specific issues related to the resource action matrix and receive an update on modeling activities. The next EOWG meeting is scheduled for:

Date: November 21, 2003
Time: 9:00 am – 12:00 pm
Location: Conference call

Action Items

The following action items were identified by the Engineering and Operations Work Group and includes a description of the action, the participant responsible for the action, and due date.

Action Item EO#93: Provide inflow hydrograph for PMF study to EOWG.
Responsible: DWR
Due Date: November 21, 2003

Action Item EO#94: Distribute copies of letter from Ralph Torres to Yuba/Feather Workgroup describing activities by DWR to address flood control concerns.
Responsible: DWR
Due Date: November 21, 2003

Action Item EO#95: Develop a chart showing the information expected to be included in E4 report and information expected from other activities outside of relicensing.
Responsible: DWR
Due Date: November 21, 2003

Action Item EO#96: Combine proposed resource actions #EO5 and #EO6.
Responsible: DWR
Due Date: November 21, 2003

Action Item EO#97: Provide examples of oversight committees designed for other relicensings.
Responsible: Facilitator
Due Date: November 21, 2003

Action Item EO#98: Confirm transfer to the Land Use, Land Management and Aesthetics Work Group of Watershed Management PM&E submitted by Butte County.
Responsible: Facilitator
Due Date: November 21, 2003

Action Item EO#99: Provide copies of resource action information forms not previously distributed and identify technical contacts and expected study completion dates on matrix.
Responsible: DWR
Due Date: November 21, 2003

Action Item EO#100: Include priority column on Summary of Potential Sensitivity Analysis chart.
Responsible: DWR
Due Date: November 21, 2003